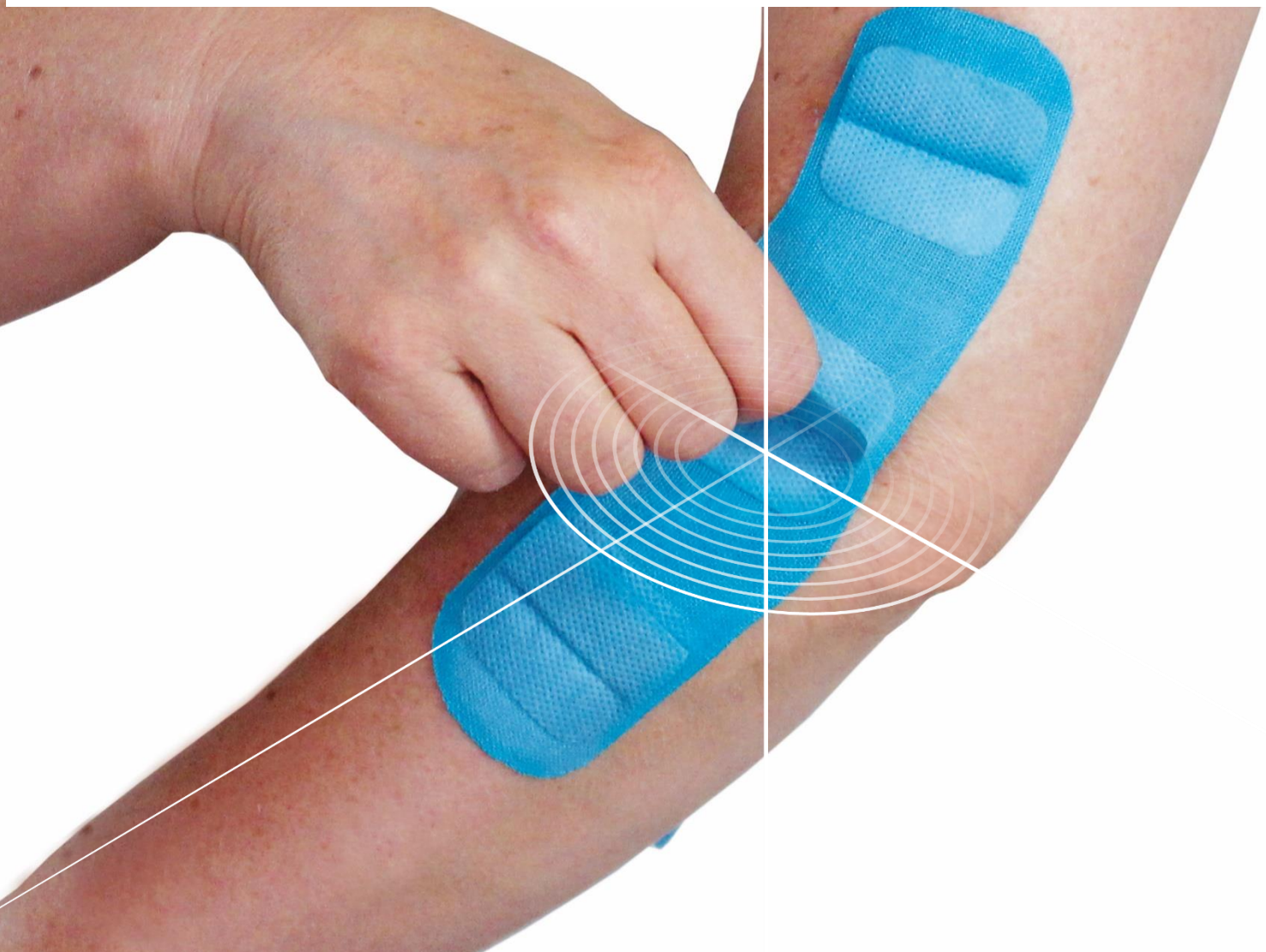




6D Tape Inc.

**Exploring the Effect of Manual and Mechanical Activation of 6D Tape and Actuators on Healthy Upper Limbs. Summary of independent research report. The Allied Research Unit, University of Central Lancashire.**

**February 2025**



## **Exploring the Effect of Manual and Mechanical Activation of 6D Tape and Actuators on Healthy Upper Limbs.**

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### **Introduction**

Early detection, diagnosis and treatment is necessary to prevent the progression of lymphatic disease. Conservative approaches offered both by a therapist to the patient, and through patient self-management programmes with therapist support are recommended in International Guidelines. Lymphatic function can lead to chronic inflammation, fibrosis, and swelling. Traditional treatments like compression garments, manual lymphatic drainage, and kinesiology taping have previously been evidenced in scientific literature. Whilst 6D Tape has introduced a novel treatment option through manual and mechanically activated handles to increase lymphatic flow, the physiological response of this approach is yet to be evidenced.

### **Objectives**

This study aimed to evaluate the efficacy of combining manual and mechanical activation of 6D Tape in promoting physiological responses in the upper limb of healthy participants. Key outcomes measured included: Skin tissue oxygenation (StO<sub>2</sub>), Limb volume changes in both the proximal (upper arm) and distal (forearm) regions, moisture levels, and tissue firmness. Comfort levels were recorded by the participants for tolerance levels.

### **Methods**

**Study Design:** Exploratory cohort study with ethical approval from the University of Central Lancashire (UCLan). **Participants:** 12 healthy individuals (4 males, 8 females) aged 33.83 ±11.95 years. **Procedure:** Participants had 6D Tape applied in three positions on the upper limb. **Manual 6D Tape activation:** Participants lifted the handles on the tape 30 times per handle for one minute. **Mechanical activation:** The 6D Tape® Pro device was attached to lift the handles automatically for 15 minutes. Outcome measurements were recorded before, during, and after the intervention. Data was analyzed using SPSS v28, employing repeated measures ANOVA and paired t-tests.

**Results:** Significant increase in skin tissue oxygenation (StO<sub>2</sub>) over time ( $p \leq 0.009$ ). Significant reduction in distal limb volume ( $p < 0.048$ ), suggesting potential lymphatic fluid movement. Participants tolerated the intervention well, with no significant changes in comfort levels, tissue moisture or firmness levels noted.

**Conclusions:** The study demonstrates benefits of 6D Tape with a combination of manual and mechanical activation in reducing distal limb volume and improving oxygenation. Future studies should explore the effects on patient populations with lymphoedema, as well as its effectiveness on other body regions.